

STREL'NIKOVA, N.I.

Conditions governing the formation of diatomite, diatomaceous clays
and opokalike rocks in Western Siberia. Trudy VNIGRI no.225:97-101
'63. (MIRA 17:3)

STREL'NIKOVA, N.I.

New species of Upper Cretaceous diatoms in the Synya Basin (Western
Siberia). Trudy VNIGRI no.239:229-231 '65. (MIRA 18:7)

TULUPOV, P. Ye.; Prinimala uchastiye STREL'NIKOVA, N. I.

Chromatographic determination of impurities of C_4 hydrocarbons
in the methane-hydrogen fraction. Zav. lab. 28 no. 12:1430-1431
'62. (MIRA 16:1)

1. Novokuybyshevskiy filial nauchno-issledovatel'skogo instituta
sinteticheskikh spirtov i organicheskikh produktov.

(Hydrocarbons) (Chromatographic analysis)

STREL'NIKOVA, N.I.

Diatoms from Upper Cretaceous deposits in the northwestern
part of the West Siberian Plain. Bot.zhur. 50 no.7:986-990
Jl '65. (MIRA 18:11)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy
geologorazvedochnyy institut, Leningrad.

STREL'NIKOVA, N. P.

^{1/5}
Vulcanization of butadiene-styrene and natural rubber.
I. I. Elitikon, G. P. ~~Strel'nikova~~, Z. N. Tarasova, A. E.
Khromov, and N. P. Strel'nikova. USSR, 103,357.
July 23, 1957. Methylene blue, resorcinol, S or methel
violet are incorporated in the rubber in vulcanization ac-
celerators and to prevent scorching. M. Horsch

STREL'NIKOVA, N. P.

27

4E2C4

3269. Determination of small amounts of zinc in ores and in metals with a high content of iron. N. P. Strel'nikova (Norilsk Mining Metallurgy Combine). Zavod. Lab., 1957, 23 (3), 277-278. The sample (1 g) is attacked with HCl, then HNO₃, and evaporated to fuming with H₂SO₄. After dilution, the soln. is filtered and made up to 200 ml. An aliquot portion (2 to 5 ml) is mixed with three times its vol. of conc. HCl in a separating funnel, and shaken energetically for 10 to 15 sec. with 3 ml of amyl acetate. The aq. layer is removed and re-extracted with further 3-ml portions of amyl acetate until colourless. Traces of Zn are removed from the combined extracts by shaking with 5 to 6 ml of dil. HCl (1 + 1), and the combined soln. containing the Zn are made just acid to methyl orange indicator by means of aq. NH₃ and dil. H₂SO₄ (1 + 1), then diluted to 25 ml with water, treated with 10 ml of NH₄SCN soln. and two to three drops of dil. H₂SO₄ (1 + 1), and shaken with 25 ml of isoamyl alcohol in a separating funnel. The alcoholic layer is separated and washed with 20 ml of a soln. of NH₄SCN in dil. H₂SO₄. The washing is repeated three times. The Zn is extracted and separated from traces of Fe by shaking the alcoholic soln. with two 10-ml amounts of an ammoniacal soln. (composition not stated). The ammoniacal extracts are carefully neutralised to Congo red indicator with dil. H₂SO₄ (1 + 4), avoiding excess of acid, then treated with ten drops of 2% hydroxylamine soln. followed by Na acetate soln. added dropwise until the colour changes from blue to red and then 20 drops in excess;

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STREL'NIKOV, N.P.

20 drops of 50% $\text{Na}_2\text{S}_2\text{O}_5$ soln. and 10 ml of 0.005% dithizone soln. are then added and the mixture is energetically shaken for 2 min. The extract containing zinc dithizonate is poured into a colorimeter cylinder and mixed with three drops of Na acetate soln. A blank is carried out simultaneously and mixed with portions of a standard soln. of Zn until the colour matches that of the sample soln. The method is suitable for the determination of 0.003 to 0.01% of Zn in samples containing 50% of Fe. Copper does not interfere; $\text{Na}_2\text{S}_2\text{O}_5$ prevents the formation of a dithizone complex.

G. S. SMITH

4
4E 2e
2/2
RH fra
6/26

Strel'nikova NP

32-11-13/60

AUTHOR: Strel'nikova, N.P.

TITLE: Short Reports (2) (Korotkiye soobshcheniya)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 11, pp. 1308-1308 (USSR)

ABSTRACT: In this paper it is stated that after the testing of various methods of the complexometric aluminum determination, preference was given to the method developed by Yu.A.Chernikov, B.M. Dobkina, and A.M. Khersonskaya (Zavodskaya Laboratoriya, 1955, Nr 6). In this paper, however, a new method is suggested, i.e. 0.4 g of the substance to be investigated is mixed with 5 g sodium hydroxide and 0.5 g sodium oxide and melted at 700°, after cooling it is dissolved in hot water; 6 drops of 5% NaS is added and after some time has elapsed the whole mixture is filtrated. An amount of the solution which is assumed to contain about from 5 to 8 mg Al, is mixed with 10 ml of the 0.05-m solution of the trilon "B". Further, the solution is neutralized by a 1:1 hydrochloric acid solution with phenolphthalein. A 10 ml acetic acid solution (2-m) and a 10 ml sodium acetate solution (1-m) is added; the mixture is heated up to boiling point and cooled; further addition: 1.5 ml of the 0.1% alizarin solution (S). Then the excess of trilon is titrated off by thorium nitrate

Card 1/2

32-11-13/60

Short Reports (2)

until the orange coloring turns red. This method can be used as an express method.

ASSOCIATION: Noril Mining-Metallurgical Combine (Noril'skiy gorno-metallurgicheskiy kombinat)

AVAILABLE: Library of Congress

Card 2/2

SOV/138-58-7-2/19

AUTHORS: Dogadkin, B.A., Eyttingon, I.I., Tarasova, Z.N., Khromov, M.K., and Strel'nikova, N.P.

TITLE: The Use of Alkylphenolaldehyde Sulphide Resins for Increasing the Adhesion and Strength of Bonds in Products Made from Butadiene-styrene Rubber (Primeneniye alkil-fenolal'degid sul'fidnykh smol dlya povysheniya kleykosti i prochnosti svyazi v izdeliyakh iz butadiyen-stirol'nogo kauchuka)

PERIODICAL: Kauchuk i rezina, 1958, Nr 7, pp 5 - 10 (USSR)

ABSTRACT: Alkylphenolaldehyde sulphide resins increase the adhesion of butadiene-styrene rubber (Ref 1). These resins are obtained by treating the condensation product of *n*-tert.-butylphenol and formaldehyde with SCl_2 or S_2Cl_2 in an alkaline medium. The condensation product was dissolved in dry dichlorethane and a 20% solution was treated at a temperature equalling its boiling point with SCl_2 , diluted in an equal amount of dichlorethane. The boiling mixture was agitated for 90 minutes and the dichlorethane distilled in a vacuum at 60°C . The softening point of the formed resin = $53 - 55^\circ\text{C}$. On further heating to 135°C , the softening point increased from 70 to 120°C .

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SOV/138-58-7-2/19

The Use of Alkylphenolaldehyde Sulphide Resins for Increasing the Adhesion and Strength of Bonds in Products Made from Butadiene-styrene Rubber

The initial condensation product had an average molecular weight of 260 and the following composition: 75.0% C, 9.2% H, 15.8% O. The molecular weight of the end product = 589 and had the following composition: 73.0% C, 8.0% H, 12.1% O, 6.3% S. The disulphide resins B were prepared by treating the condensation product of alkylphenol and formaldehyde with S_2Cl_2 in substantially the same way as alkylphenolaldehyde monosulphide resins. The molecular weight of this resin = 589 which was approximately equal to the calculated value (585). Sulphide resins C were prepared from alkylphenol formaldehyde lacquer resins Nr 101 (VTO MKhP 2196-50) which is prepared by condensing n.-tert.-butylphenol with formaldehyde in an alkaline medium, and subsequently neutralising it with H_2SO_4 and hardening at 140 °C. The physico-mechanical properties of adhesives based on butadiene-styrene rubber SKS-30A containing sulphide resins and vulcanised in the

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SOV/138-58-7-2/19

The Use of Alkylphenolaldehyde Sulphide Resins for Increasing the Adhesion and Strength of Bonds in Products Made from Butadiene-styrene Rubber

absence of sulphur or accelerators for 60 minutes at 143 °C, are listed (Table 1). Sulphide resins increase the degree of vulcanisation but alkylphenolaldehyde resins decrease the degree of vulcanisation of rubbers based on SKS-30A (Table 2). The sulphide resins impart to the resins high moduli and a high degree of break-strength. Sulphide resins have the same degree of thermal stability and resistance to ageing as rubbers not containing these resins or phenolaldehyde resins. 60% of the total amount of sulphur, introduced into the rubber in the form of a resin, is chemically bound to the rubber. Sulphide resins also strengthen the rubber. From Table 3, it can be seen that the sulphide resins increase the dynamic modulus, internal friction and the strength of the rubbers. The effect of sulphide resins on the adhesive properties of adhesives based on SKB-30A is shown in Figure 2 and Table 4. An increase in the content of sulphur and accelerators (up to 5-10%) results in increased efficiency of the rubbers (Figure 3). The degree of deformation was

Card3/5

SOV/138-58-7-2/19

The Use of Alkylphenolaldehyde Sulphide Resins for Increasing the Adhesion and Strength of Bonds in Products Made from Butadiene-styrene Rubber

found to be in an inverse proportion to the modulus. However, an increase in the content of sulphur and accelerators in the adhesives achieves better co-ordination of various layers and a very strong layer is formed in the contact region. Sulphide resins are very good adhesives. An increase in the strength of the bond of the vulcanised rubbers is achieved without lowering the adhesive properties. The investigated alkylphenolaldehyde resins inhibit the vulcanisation of rubbers and thus decrease the strength of the bonds. Resins which simultaneously decrease the degree of vulcanisation of the rubbers as, for instance, resin Nr 101, decrease also the strength of the bonds of the rubbers.

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SOV/138-58-7-2/19

The Use of Alkylphenolaldehyde Sulphide Resins for Increasing the Adhesion and Strength of Bonds in Products Made from Butadiene-styrene Rubber

There are 3 Figures, 4 Tables and 6 references, 2 of which are English and 4 Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tyre Industry)

Card 5/5

1. Resins--Applications
2. Synthetic rubber--Bonding
3. Synthetic rubber--Properties

FEL'DSHTEYN M.S.; EYTINGON, I.I.; PEVZNER, D.M.; STREL'NIKOVA, N.P.;
DOGADKIN, B.A.

Study of a series of derivatives of-mercaptobenzothiazole and
dimethyldithiocarbamic acid as vulcanization accelerators. Kauch.
i rez. 18 no.1:16-21 Ja '59. (MIRA 12:1)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Vulcanization) (Benzothiazole) (Carbamic acid)

POLYAK, E.A.; STREL'NIKOVA, N.P.; PAVLOVA, V.N.; RIVNYY, V.S.; ONUFRIYENOK,
I.P.; SOKOLOVICH, V.B.; LEKHOVITSKIY, I.N.; ALEKSANDROVA, Ye.N.;
CHERNUKHA, G.N.

Brief reports. Zav.lab. 25 no.2:162-163 ' 59. (MIRA 12:3)

1. Sverdlovskiy zavod khimicheskikh reaktivov (for Polyak). 2. Noril'-
skiy gorno-metallurgicheskiy kombinat (for Strel'nikova, Pavlova).
3. Slavyanskiy sodovyy kombinat (for Rivnyy). 4. Tomskiy politekhniche-
skiy institut (for Onufriyenok, Sokolovich). 5. Khar'kovskiy elektrotekhnich-
skiy zavod (for Lekhovitskiy, Aleksandrova). 6. Moskovskiy mashinostroitel'-
nyy zavod (for Chernukha).

(Chemistry, Analytical)

3(5)
AUTHORS:

Eytinger, I. I., Strel'nikova, N. P.,
Fel'dshteyn, M. S.

SOV/79-29-6-56/72

TITLE:

Synthesis of Some 1,4-Piperazine-bis-carbothiosulfonamides
(Sintez nekotorykh 1,4-piperazin-bis-karbotiosul'fenamidov)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 2032-2034 (USSR)

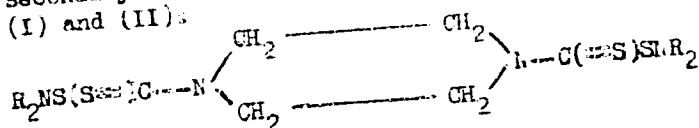
ABSTRACT:

There are contradictory data in technical literature on the chemical character of products of the conversion of equimolecular quantities of piperazine and carbon disulfide. The fine-crystalline end product of this reaction corresponds to the empirical formula $C_5H_{10}N_2S_2$. This compound, called "thioid", is used as a vermifuge, as well as for analytic determination of cobalt in the presence of nickel and copper. T. Pavolini and F. Gambarin (Ref 2) heated the thioid with 0.1 normal solution of KOH and obtained the neutral salt $C_{10}H_{18}N_4S_4K_2$, which according to their opinion points to the presence of a complex of compounds with two sulfhydryl groups. I. Dunderdale and F. Watkins (Ref 3) dissolved the thioid in an alkaline lye and obtained after treatment of the solution with benzyl chloride, a mixture composed of benzyl esters of the piperazine-carbodithio-1- and piperazine-dicarbodithio-1,4-acid.

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Synthesis of Some 1,4-Piperazine-bis-carbothiosulfonamides SOV/19-29-6-56/72

According to these scientists the initial product is a complex consisting of structural units of the mono- and dicarbothio-acids of piperazine. The authors obtained by conversion of carbon-disulfide with piperazine in an alkaline medium, and by subsequent oxidizing condensation of the reaction product with the corresponding secondary aliphatic amines, two until present unknown compounds (I) and (II):



$R\text{---}CH_3$ (I), C_2H_5 (II).

This synthesis leads to the assumption that, in the conversion of piperazine with carbon-disulfide in an alkaline medium the formation of the acid (III) takes place, which serves as an intermediate product for the synthesis of sulfenamido derivatives, followed by an oxidizing condensation with the amines (Scheme). The two compounds obtained are adequately efficient accelerators for the sulfur vulcanization of natural and synthetic butadiene-styrene rubber. There are 3 references.

Card 2/3

Synthesis of Some 1,4-Piperazine-bis-carbothiosulfonamides SOV/79-29-6-56/72

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific Research Institute for Pneumatic Tire Industry)

SUBMITTED: May 9, 1958

Card 3/3

5(3), 15(9)

SOV/80-32-4-34/47

AUTHORS: Feldshteyn, M.S., Dogadkin, B.A., Eytngon, I.I., Shcherbachev, G.P. and Strel nikova, N.P.

TITLE: On the Problem of the Effect of the Chemical Structure of Sulfenamide Compounds on Vulcanization Activity (K voprosu o vliyani khimicheskoy struktury sul'fenamidnykh soyedineniy na vulkanizatsionnuyu aktivnost')

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 893-901 (USSR)

ABSTRACT: The authors investigated the effect of various sulfenamide compounds as vulcanization accelerators with an aim to find a correlation between their vulcanization activity and chemical structure. Representatives of the two classes of these compounds, namely derivatives of the mercaptobenzothiazole and dimethyldithiocarbamic acid, were studied. The effectiveness of their action as accelerators was investigated on mixtures which consisted of butadiene-styrol rubber (SKS-30A). The effect of accelerators on the kinetics of vulcanization is shown in Figure 1 according to data of sulfur addition, in Figure 2 according to the changes in solubility in chloroform, and in Figure 3 according to the changes in the value of the equilibrium module. The kinetic curves of vulcanization presented in Figures

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SOV/80-32-4-34/47

On the Problem of the Effect of the Chemical Structure of Sulfenamide Compounds on Vulcanization Activity

1 and 2 show the presence of an initial delayed period of vulcanization. Therefore, the authors conclude that this peculiarity prevents the phenomenon of premature vulcanization and ensures a more lasting staying of the mixtures in the visco-flowing state, which is of importance for manufacturing monolithic multi-layer items. The application of the described accelerators of vulcanization is considered as technologically expedient, for instance in the manufacture of tire treads.

There are 12 graphs, 1 table and 7 references, 5 of which are Soviet and 2 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific Research Institute for Tire Industry)

SUBMITTED: December 11, 1957

Card 2/2

STREL'NIKOVA, N. P.

S/081/61/000/023/052/061
B106/B101

AUTHORS: Betts, G. E., Zhakova, V. G., Karmin, B. K., Strel'nikova, N. P., Eytingon, I. I.

TITLE: Chemical mastication accelerators for natural and synthetic rubber and prospects of their application

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1961, 559, abstract 23P344. (Tr. N.-i. in-ta shin. prom-sti, sb. 5, 1960, 21-35)

TEXT: Numerous compounds have been examined, many of which are vulcanization accelerators. Dimethyl phenyl p-cresol (I) was found to be the most active chemical mastication accelerator for CMC-30 (SKS-30) rubber. In the presence of 1.2 parts by weight of I, mastication can be carried out in kettles within 30 to 50 min at 130°C as against 70 min at 135°C without I. A similar accelerating action is exerted by I on the mastication of CMC (SKN) and CMC (SK1) rubber, but not on that of HMC (NK) rubber. Active mastication accelerators for NK rubber are Renacit II, IV, and V (trichloro-thiophenol, zinc salt of pentachlorothiophenol, or pentachlorothiophenol, respectively), Vulkamel TEN (30% thio-β-naphthol and 67% inert paraffin).

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Chemical mastication accelerators...

S/081/61/000/023/052/061
B106/B101

Peptone 65 (zinc salt of o-benzamidothiophenol), the zinc salt of trichloro-thiophenol. Peptone 22 (o,o'-dibenzamidodiphenyl disulfide), and α-nitro-β-naphthol. When selecting mastication accelerators, it should be borne in mind that they are able to affect the scorching of compounds as well as the vulcanization and physicomechanical properties of vulcanizates in different ways, depending on the type of rubber, filler, and other ingredients. Of great importance are the cooling conditions of the masticated rubber. Scorching is frequently increased by water cooling. Accelerators permit mastication in closed rubber mixers and preparation of compounds at the same time. Accelerators that are active at relatively low temperatures, such as Renacit IV and Peptone 65, are required for this purpose. [Abstracter's note: Complete translation.] ✓

Card 2/2

ENR 3/3

STREL'NIKOVA, N.P.; LYSTSOVA, G.G.

Separation of tellurium from platinum and nonferrous metals by
means of a cationite. Zav.lab. 26 no.2:142-144 '60.
(MIRA 13:5)

(Tellurium--Analysis)
(Platinum--Analysis)
(Nonferrous metals--Analysis)

S/032/60/026/04/08/046
B010/B006

AUTHORS: Strel'nikova, N. P., Pavlova, V. N.

TITLE: Determination of Aluminum and Tellurium Using an Anion Exchanger

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 4, pp. 425 - 426

TEXT: An anion exchanger of the type EDE-10p²⁴ (in the Cl-form) was used for the separation of tellurium from aluminum. The latter is not absorbed by the exchanger, regardless of the pH. Tests of 4-12 molal hydrochloric acid solutions containing 50 - 100 mg tellurium showed that tellurium is quantitatively absorbed from such solutions by the above-mentioned exchanger. If a 6 molal hydrochloric acid solution containing tellurium, copper, iron, and aluminum is passed through the exchanger, only aluminum appears in the eluate and can then be determined colorimetrically at a pH = 5.5 using aluminon. An FEK-M²³ photocolormeter and a green filter were applied in the present case. There is 1 Soviet reference. (✓)

ASSOCIATION: Noril'skiy gorno-metallurgicheskiy kombinat (Noril'sk Kombinat of Mining Metallurgy)

Card 1/1

PAVLOVA, V.N., STREL'NIKOVA, N.P.

Determination of small amounts of cadmium in nickel and cobalt
by means of ion exchange. Zav.lab. 26 no.5:536-537 '60.

(MIRA 13:7)

(Cadmium--Analysis) (Nickel--Analysis) (Cobalt--Analysis)

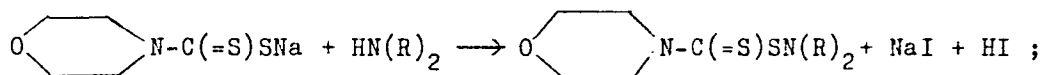
S/079/60/030/009/014/015
B001/B064

AUTHORS: Eytingon, I. I., Strel'nikova, N. P.
TITLE: Synthesis of Some 4-Morpholine- and 1-Piperidine Carbo-
thiosulfene Dialkylamides
PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 9,
pp. 3137-3139

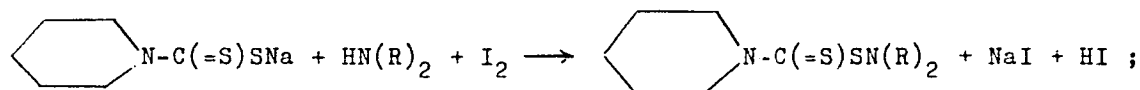
TEXT: The authors had previously synthesized and described (Ref. 1) some 1,4-piperazine bis-carbothiosulfene dialkylamides. The compounds obtained were tested for their accelerating effect in the sulfur vulcanization of natural and synthetic rubbers. In the present case, hydrogen sulfide was reacted with morpholine or piperidine in an alkaline medium. The sodium salts of the resulting dithiocarbamic acids were condensed with secondary aliphatic amines in an acid medium. The following four hitherto unknown products resulted: 4-morpholine carbothiosulfene dimethylamide (I), 4-morpholine carbothiosulfene diethylamide (II), 1-piperidine carbothiosulfene dimethylamide (III), and 1-piperidine carbothiosulfene diethylamide (IV). Schemes: ✓

Card 1/2

Synthesis of Some 4-Morpholine- and 1-Piperidine S/079/60/030/009/014/015
Carbothiosulfene Dialkylamides B001/B064



(I) R = CH₃, (II) R = C₂H₅ and



(III) R = CH₃, (IV) R = C₂H₅. The syntheses are described in detail in the experimental part. There is 1 Soviet reference. ✓

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific Research Institute of the Tire Industry)

SUBMITTED: September 25, 1959

Card 2/2

3/032/62/028/006/004/025
B110/B101

AUTHORS: Larol'nikova, N. P., and Lystsova, G. G.

TITLE: Determination of small amounts of bismuth in products containing non-ferrous and platinum metals

JOURNAL: Zavodskaya laboratoriya, v. 28, no. 6, 1962, 659

NOTE: Bismuth was separated by precipitation with iron hydroxide in the presence of NaNO_2 . In this process the main fractions of copper and nickel along with the platinum metals in the form of nitrite complexes are dissolved, whilst Bi, Fe, Te, part of Se, and small amounts of Cu and Ni remain in the sediment. The diethyl dithiocarbamates of Bi are extracted by chloroform at pH = 11 - 12, those of Se at pH = 4 - 6.2, and those of Te at pH = 4 - 5.8. Platinum metals, copper, and nickel form no carbamates in the presence of KCN. Iron can be bound as a tartrate complex. Bi is colorimetrically determined with KI after decomposition of the bismuth carbamate with HNO_3 and reduction of Bi with thiourea. The maximum error in determination is -6%. This method can also be used to determine Bi in copper slimes. There is 1 table.
Card 1/2

Determination of small ...

3/032/62/028/006/004/025
B110/B101

ASSOCIATION: Noril'skiy gorno-metallurgicheskiy kombinat im. A. P.
Zavoyagina (Noril'sk Mining and Metallurgical Combine imeni
A. P. Zavoyagin)

Car: 2/2

MARCHENKO, N.A.; RAYBER, Z.S.; LIPKO, S.K.; OS'MAKOVA, V.T.; KRYMER, S.Ye.;
LOMEKHOV, A.S.; STREL'NIKOVA, N.P.; KORCHEMNAYA, Ye.K.; NAUMOVA, V.I.

Exchange of experience. Zav.lab. 28 no.10:1192-1193 '62. (MIRA 15:10)

1. Khar'kovskiy politekhnicheskii institut imeni Lenina (for Marchenko, Rayber, Lipko). 2. Severnyy nikel'nyy kombinat (for Kreymmer, Lomekhov). 3. Noril'skiy gorno-metallurgicheskii kombinat imeni A.P. Zavenyagina (for Strel'nikova). 4. Institut geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo (for Korchemnaya, Naumova).

(Chemistry, Analytical)

S/032/62/028/010/002/009
B117/B186

AUTHOR: Strel'nikova, N. P.

TITLE: Separation of sulfur and selenium by extraction

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 10, 1962, 1193

TEXT: Tributyl phosphate and carbon tetrachloride were used to separate sulfur and Se(IV) from 6-12 N HCl solutions. The sulfates remained in the liquid phase. Selenites could be extracted only up to 95-97%, as opposed to tellurates which can be completely extracted. Small quantities of selenium remaining in the solution can be separated by reducing Se(IV) with hydroxylamine hydrochloride. Sulfur is determined in the form of BaSO_4 .

ASSOCIATION: Noril'skiy gorno-metallurgicheskiy kombinat im.
A. P. Zavenyagina (Noril'sk Mining and Metallurgical
Combine imeni A. P. Zavenyagin)

Card 1/1

S/032/62/028/011/002/015
B106/B186

AUTHORS: Strel'nikova, N. P., Lystsova, G. G., and Dolgorukova, G. S.

TITLE: Determination of impurities in selenium

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 11, 1962, 1319 - 1321

TEXT: Cu, Ni, Co, Pb, and As impurities in selenium were determined quantitatively. Cu, Ni, Co, and Pb were separated from the bulk of Se by extracting their diethyl-dithio carbamates with chloroform from alkaline solution (phenolphthalein). Cu was extracted in the presence of Trilon B to prevent the coextraction of lead; lead extraction was effected with addition of potassium cyanide to prevent the coextraction of copper. The relevant metals were reextracted from the extracts with HNO_3 . Finally,

Cu was determined with diethyl-dithio carbamate, Ni with dimethyl glyoxime, Co with nitroso R-salt, and Pb with dithizon. Cu, Ni, Co, and Pb can also be separated by adsorption on a cationite from selenium which is not adsorbed from 0.1 N hydrochloride solution. To determine the As contained in Se, As was distilled from sulfate solution in the presence of HCl , hydrazine sulfate, and potassium bromide. In the distillate As was deter-

Card 1/2

Determination of impurities in selenium

S/032/62/028/011/002/015
B106/B186

mined on the basis of the color reaction with ammonium molybdate in sulfate solution in the presence of hydrazine sulfate. Using the methods described, the above-mentioned impurities can be determined in Se in concentrations of 10⁻³%. There is 1 table.

ASSOCIATION: Noril'skiy gornometallurgicheskiy kombinat im. A. P. Zavenyagina (Noril'sk Combine of Mining and Metallurgy imeni A. P. Zavenyagin)

Card 2/2

S/079/62/032/005/007/009
D204/D307

AUTHORS: Eytingon, I.I., and Strel'nikova, N.P.
 TITLE: Synthesis of polychlorobenzene-sulphene-dialkylamides
 PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 5, 1962, 1653-1655
 TEXT: The authors prepared 5 new compounds:

$\text{Cl}-\text{C}_6\text{H}_2\text{Cl}_4-\text{S}-\text{NR}_2$ (where R = Me, iso-Pr) and $\text{Cl}-\text{C}_6\text{H}_2\text{Cl}_4-\text{S}-\text{NR}_2$
 (where R = Me, Et, iso-Pr), by the oxidative condensation of the
 corresponding tri- and pentachloro-thiophenols and secondary amines.
 The experimental method consisted of a slow mixing of the thiophe-
 nol, in the form of its Na salt, into an aq. solution of the amine,
 at 0-30°C, followed by addition of aq. NaOCl. The products were inso-
 luble in water but dissolved in organic solvents.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlen-
 nosti (Scientific Research Institute of the Tire In-
 dustry)
 Card 1/2

Synthesis of polychlorobenzene- ...

S/079/62/032/005/007/009
D204/D307

SUBMITTED: May 30, 1961

Card 2/2

EYTINGON, I. I.; STREL'NIKOVA, N. P.

New polychlorothiophenyl esters of N,N-dialkylthiocarbamic
acids. Zhur. ob. khim. 32 no.12:3888-3890 D '62.
(MIRA 16:1)

(Carbamic acid)

STREL'NIKOVA, N.P.

Extraction of diethyldithiocarbamates in the analysis of various materials from the metallurgical production. Trudy Khim.anal.khim. 14:305-311 '63. (MIRA 16:11)

SHVARTS, A.G.; EYTINGON, I.I.; FROLIKOVA, V.T.; STREL'NIKOVA, N.P.

Some requirements for alkylphenol-formaldehyde resins used for
the vulcanization of butyl rubber. Kauch. i rez. 22 no.10:
17-18 0 '63. (MIRA 16:11)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

PAVLOVA, V.N.; STREL'NIKOVA, N.P.

Determination of microquantities of copper in nickel electrolytes.
Zav.lab. 29 no.5:548 '63. (MIRA 16:5)

1. Noril'skiy gorno-metallurgicheskiy kombinat im. A.P.Zavenyagina.
(Copper--Analysis) (Nickel compounds)

BELOKOPYTOV, V.S.; STREL'NIKOVA, N.P.

Central chemical laboratory of the Noril'sk Mining and Metallurgical Combine striving for a citation as a communist labor team. Zav.lab. 29 no.5:630-631 '63. (MIRA 16:5)

1. Ispolnyayushchiy obyazannosti nachal'nika TSentral'noy khimicheskoy laboratorii Noril'skogo gorno-metallurgicheskogo kombinata (for Belokopytov). 2. Rukovoditel' metodicheskoy gruppy TSentral'noy khimicheskoy laboratorii Noril'skogo gorno-metallurgicheskogo kombinata (for Strel'nikova).
(Noril'sk--Metallurgical laboratories)

EYTINGON, I.I.; STREL'NIKOVA, N.P.

Polychlorobenzenesulfenamides based on morpholine, piperidine,
and cyclohexylamine. Zhur. ob.khim. 34 no. 6:1609-1609 My '64.
(MIRA 17:7)

1. Nauchno-issledovatel'skiy institut shiriny promyshlennosti.

L 3379-66 EWT(m)/EPF(c)/EWP(j) RM

ACCESSION NR: AP5022090

UR/0138/65/000/008/0009/0012

50

44 678.044:536.45.096

47

AUTHOR: Eytingon, I. I.; Krasukhina, M. M.; Kavun, S. M.; Strel'nikova, N. P.;
Butyugin, V. K.

8

TITLE: Thermal conversion of an N-cyclohexylbenzothiazole-2-sulfenamide vul-
canization accelerator

SOURCE: Kauchuk i rezina, no. 8, 1965, 9-12

TOPIC TAGS: rubber chemical, organic substituted amide, organic sulfur com-
pound, EPR spectrum, thermochemistry, free radical, vulcanization, reaction
mechanism, heat resistance

ABSTRACT: The effect of rubber mixing and vulcanization temperatures on the
conversion of sulfenamide Ts [Abstractor's note: Compound corresponds to
"Santocure."] and the effect of additives on the thermal stability of this vulcaniza-
tion accelerator were studied. Heating of the sulfenamide samples at 105-110C
for 2 and 6 hours did not produce significant change in the melting of the material
except to lower its melting temperature slightly. Thermal decomposition of the
sulfenamide at 140 -145 C is preceded by an induction period whose length depends

Card 1/2

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ACCESSION NR: AP5022090

3

on the impurities present. Decomposition is accompanied by spontaneous temperature increase and evolution of hydrogen sulfide and amine. 2-Mercaptobenzothiazole, its cyclohexylamine salt, and 2,2'-dibenzothiazylidisulfide were separated and identified among the resinous decomposition products. The effects of adding these three compounds or sulfur to mixes containing the sulfenamide were studied. Sulfur had the greatest effect on the thermal stability of the accelerator at 140-145 C, and the addition of 1% sulfur on weight of the sulfenamide reduced the induction period from 150 to 10 minutes. Examination of EPR spectra established that the thermal decomposition of this sulfenamide is a radical chain process. The presence of benzothiazolesulfide radicals was indicated. Orig. art. has: 3 figures and 4 equations

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific Research Institute for the Tire Industry) 4

SUBMITTED: 00

ENCL: 00

SUB CODE:

NR REF SOV: 001

OTHER: 002

Card 2/2 *md*

SOV/137-58-10-20802

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 65 (USSR)

AUTHORS: Sirota, N.N., Samsonov, G.V., Strel'nikova, N.S.

TITLE: Electrical Properties of Some Metalloid Compounds and Solid Solutions Thereof (Elektricheskiye svoystva nekotorykh metallopodobnykh soyedineniy i ikh tverdykh rastvorov)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, nauchno-tekhn. o-vo tsvetn. metallurgii, 1957, Nr 30, pp 363-374

ABSTRACT The results of measurement of the electrical resistivity and thermoelectromotive force of a number of carbides, silicides, borides, nitrides, and certain binary alloys thereof, all in a Cu-containing vapor, and of preliminary determination of the magnetic susceptibility of a number of two-component alloys of these compounds are presented. The specimens for investigation are made by hot extrusion. The electronic structure of the objects of investigation is used as the basis for discussion of certain results of the work. 1. Intermetallic compounds--Electrical properties 2. Alloys--Electrical properties R.A.

Card 1/1

SAMSONOV, G.V. [Samsonov, H.V.]; STREL'NIKOVA, N.S.

On the thermoelectromotive force of some metallic borides and
carbides in contact with copper [with summary in English]. Ukr.
fiz.zhur. 3 no.1:135-138 Ja-F '58. (MIRA 11:4)

1. Institut metalokeramiki ta spetsial'nikh splaviv AN URSR.
(Thermoelectricity) (Borides--Electric properties)
(Carbides--Electric properties)

SOV-21-58-8-9/27

AUTHORS: Samsonov, G.V., Neshpor, V.I., Strel'nikova, N.S.

TITLE: Magnetic Susceptibility of Solid Solutions of Some Metal-Like Compounds (Magnitnaya vospriimchivost' tverdykh rastvorov nekotorykh metallopodobnykh soedineniy)

PERIODICAL: Dopovidi Akademii nauk Ukrain's'koi RSR, 1958, Nr 8, pp 838-840 (USSR)

ABSTRACT: Investigations of magnetic susceptibility of metal-like compounds can contribute to an explanation of the nature of chemical bounds in these phases. The authors investigated the magnetic susceptibility of the single-phase solid solutions of the following metal-like compounds: ZrC-NbC; TaC-NbC; TaB₂-ZrB₂ and TiC-TiN. Since the measurements of absolute susceptibility were difficult due to experimental conditions, the values of relative susceptibility were determined by taking that of one of the components for unity. The results of experiments are presented in graphical form showing the dependence of magnetic susceptibility on the concentration. The two curves for the alloys NbC-ZrC and TaB₂-ZrB₂ have peaks, whereas the curve for NbC-TaC does not possess a peak. In

Card 1/2

SOV-21-58-8-9/27

• Magnetic Susceptibility of Solid Solutions of Some Metal-Like Compounds

the alloy TiC-TiN, a sharp fall of the magnetic susceptibility is observed with increasing TiC concentration. The authors attempt to interpret theoretically these experimental data. There are 2 graphs and 5 references, 3 of which are Soviet, 1 German and 1 Polish.

ASSOCIATION: Institut metallokeramiki i spetsialnykh spлавov AN UkrSSR (Institute of Metalloceramics and Special Alloys of the AS UkrSSR)

PRESENTED: By Member of the AS UkrSSR, V.N. Svechnikov

SUBMITTED: February 26, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Intermetallic compounds--Magnetic properties 2. Intermetallic compounds--Phase studies

Card 2/2

Strel'nikova, V. A.

Formation of ground water of the Karatau (Mingyshtak) region. Zh. Sydykov and V. A. Strel'nikova. Izvest. o Akad. Nauk Kazakh. S.S.R., Ser. Geol., No. 22, 112-25 (in Russian).—A report in which a table of annotation analyses of the ground waters is presented.

Gladys S. Macy

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DANIYELYAN, E.Ye.; STRELNIKOVA, V.G.

Cases of mycosis caused by the fungi *Microsporium gypseum* and
Microsporium lanosum in Erivan. Zhur. eksp. i klin. med. 3 no.1:
105-108'63. (MIRA 16:10)

1. Yerevanskiy gorodskoy kozhno-venerologicheskii dispanser.
(ERIVAN — MYCOSIS) (ERIVAN — MICROSPORUM)

STRELNIKOVA, V.I.

Preparation of leaf sections. Biol. v shkole no.1:89
Ja-F '63. (MIRA 16:6)

1. Shkola No. 63, Moskva.
(Botany—Audio-visual aids)

YERU, I.I.; LAME, A.A.; ZEYDLIS, Ye.M.; STREL'NIKOVA, V.P.

Catalytic hydrogenation of quinoline for the production of the "Kysol"
repellent. Koks i khim. no.10:46-49 '62. (MIRA 16:9)

1. Ukrainskiy uglekhimicheskiy institut.
(Kysol) (Coke industry--By-products)

KULAYEV, B.S.; SHRELD'NIKOVA, Ye.A.

Reflex effect of pressure changes in the cardiac cavities of a frog on peripheral blood circulation and the heartbeat rate.
Biol. eksp. biol. i med. 56 no.9:24-29 S '63.

(MIRA 17-10)

1. Iz instituta normal'noy i patologicheskoy fiziologii AMN S.S.S.R.,
Moskva. Predstavlena deystvitel'nym chlenom AMN S.S.S.R. A.V. Iane-
Jinskim.

СИМЕЛ'НИКОВА, Ye. Ye.:

СИМЕЛ'НИКОВА, Ye. Ye.: "Investigations of the reactions of complex-formation of organic sulfoxides with certain other organic substances."
Min Higher Education USSR. Tomsk Order of Labor Red Banner Polytechnic Institute S. M. Kirov. Tomsk, 1956. (Dissertation for the Degree of Candidate in Chemical Science.)

so: Khizhnaya letopis' no. 36 1956 Moscow.

CHU, L. H. K. W., Ye. Ye., and Chen, Sci -- Ling " Study of reactions
of complex formation of organic sulfur compounds with other or-
ganic substances." Tashkent, 1959. 16 pp with graphs (Min of Higher
Education, Tashkent State U in V.V. Kuybyshev), 110 copies
(R, 29-51, 126)

-10-

ACCESSION NR: AT4012396

S/2648/63/000/015/0003/0012

AUTHOR: Gruza, G. V.; Kaznacheyeva, V. D.; Strel'nikova, Yu. P.

TITLE: The structure and ageostrophicity of a wind field over the valleys and mountainous regions of Central Asia

SOURCE: Tashkent. Sredneaziatskiy nauchno-issledovatel'skiy gidrometeorologicheskii institut. Trudy*, no. 15(30), 1963, 3-12

TOPIC TAGS: wind, saturation rate, ageostrophicity atmospheric circulation, wind velocity, wind profile

ABSTRACT: The main characteristic of the structural function of winds over mountains is its rapid saturation, which occurs first at short distances and later does not depend on distance. A formula is derived to calculate this independence of the structural function and the distance. Because of local circulations connected with the diversity of the mountain relief, wind velocities, even at short distances, are also statistically independent. To find out the difference between the absolute values, average coefficients were calculated characterizing the anisotropy. It was proved that the flow of wind over mountains is more isotropic than over valleys. The turbulent influence of mountain systems

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ACCESSION NR: AT4012396

causes an increase in the intensity of the wind. The comparison between real and geostrophic winds is important, but the differences between these winds do not correctly represent the ageostrophicity of atmospheric movements. The ageostrophic deviations depend on acceleration while the average acceleration in the atmosphere equals 0. The coefficient of the connection between the vectors of a real and a geostrophic wind is shown and the value of the vector connection is calculated according to a derived formula. The vector connection between the two types of winds is no worse over mountains than over valleys. The real and geostrophic winds are, on the average, stronger over valleys than over mountains. The braking effect of orographic obstacles occurs upward along the flow. "A. Zhamankulova, M. Ibragimova, S. Magdaliyeva, and T. Samsonova, students of the Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina (Tashkent State University) participated in the collection and processing of data for the article."

ASSOCIATION: Sredneaziatskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut, Tashkent (Central Asian Scientific Research Hydrometeorological Institute, Tashkent)

SUBMITTED: 00

DATE ACQ: 20Feb64

ENCL: 00

SUB CODE: ES

NO REF SOV: 013

OTHER: 001

Card 2/2

LOPATKIN, A.A.; STREL'NIKOVA, Zh.V.; LEBEDEV, V.P.

Dependence of the catalytic activity of platinum on the temperature
of calcination. Vest.Mosk.un. Ser.mat.,mekh.,astron.,fiz.,khim.
11 no.1:255-259 '56. (MIRA 10:12)

1. Kafedra obshchey khimii Moskovskogo universiteta.
(Platinum) (Catalysis)

STREL'NIKOVA, ZH. V.

✓ The thermal activation and deactivation of platinum adsorption catalysts in the decomposition of hydrogen peroxide. Zh. V. Strel'nikova, A. A. Lopatkin, and V. P. Lebedev (M. V. Lomonosov State Univ., Moscow). *Zhur. Fiz. Khim.* 30, 639-44 (1956). — The catalytic activity was investigated of adsorption catalysts (Pt on SiO₂ gel) with degrees of filling of 0.0054, 0.0178, and 0.035, prepd. by a previously described method (C.A. 50, 19503b), in relation to the ignition temp. (300-700°). Thermal activation and deactivation effects, with prominent max., were found in the Pt/SiO₂ catalysts. The carrier has a stabilizing effect on the Pt centers with respect to temp. effects, which becomes more pronounced as the Pt content decreases. The characteristic activity max. tend to shift towards higher temps. with more dil. catalysts. The high thermal activation in the very dil. layers is compared with extinction of luminescence and of magnetic effects. W. M. Sternberg

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STREL'NIKOVA, Zh. V.

USSR/ Chemistry - Physical chemistry

Card 1/2 Pub. 147 - 24/35

Authors : Strel'nikova, Zh. V.; Lopatkin, A. A.; and Lebedev, V. P.

Title : Thermal activation and deactivation on Pt-black during hydrogen peroxide decomposition

Periodical : Zhur. fiz. khim. 30/1, 196-201, Jan 1956

Abstract : Experiments were made to determine the effect of calcination temperature ranging from 100 to 700° C. on the catalytic activity of platinum black during the decomposition of hydrogen peroxide. Hydrogen peroxide decomposition was used in the role of a control process for the purpose of determining the activity of the Pt-black. An extreme dependence upon the activity maxima was observed at temperatures of 160, 220, 250 and 500°C. The cause

Institution : Moscow State University im. M. V. Lomonosov

Submitted : July 7, 1955

Card 2/2 Pub. 147 - 24/35

Periodical : Zhur. fiz. khim. 30/1, 196-201, Jan 1956

Abstract : for the crop in activity at a temperature range of from 250 to 500° C are analyzed. Origination of active centers followed an increase in temperature; these active centers disappear upon reaching a new critical temperature at which the intensity of the active phase increases again. Fourteen references: 9 USSR, 1 USA, 3 Germ., and 1 Eng. (1890-1955). Table; graphs.

LOPATKIN, A.A.; STREL'NIKOVA, Zh.V.; OSIPOVA, N.S.; LEHEDEV, V.P.

Effect of the preliminary roasting on thermal activation and
desactivation of platinum catalysts. Vest. Mosk. un. Ser. mat.,
mekh., astron., fiz. khim., 12 no.5:215-219 '57. (MIRA 11:9)

1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta.
(Platinum) (Catalysts)

STREL'NIKOVA, ZH V.

6

Magnetochemistry of active centers. IV. The relation of the magnetic susceptibility of adsorption platinum catalysts on the roasting temperature. A. A. Lopatin, Zh. V. Strel'nikova, and V. P. Lebedev (M. V. Lomonosov State Univ., Moscow). *Zhur. Fiz. Khim.* 31, 195-9 (1957); *cf. C.A.* 50/ 10300b, 13531c; 51, 10280f. — The magnetic susceptibility, χ , was detd. for 3 Pt on SiO_2 catalysts (degree of filling of the surface, $\alpha = 0.0054$, 0.0178, and 0.035) as a function of the preliminary heat-treatment. For $\alpha = 0.0178$ and $\alpha = 0.035$ the χ vs. T curves are completely identical. A comparison of data on catalytic activity (based on H_2O_2 decompn.) and magnetic properties showed that for the catalyst with $\alpha = 0.0054$, an increase in activity is accompanied by an increase in the paramagnetism. For the 2 remaining catalysts this is true only below $T = 550^\circ$.

J. Rovtar Leach

M-78

STREL'NIKOVA, Zh. V.

Distr: 4E4j/4E2c

21 / Kinetics of the thermal activation and deactivation of
platinum catalysts. A. A. Leparkin, Zh. V. Strel'nikova,
and V. P. Lebedev (M. V. Lomonosov State Univ., Mos-

cow). *Zhur. Fiz. Khim.* 31, 1820-4 (1957); cf. C.A. 50,
13581c. — Two equil. ranges were observed during the sinter-
ing of Pt black on SiO_2 gel at 200°. The activity isotherm
had several max. and min. differing considerably from the
initial; at 350° and 450° the activity dropped sharply (ap-
parently in a 1st-order kinetic reaction) and then remained
const. at const. temps. When the catalysts were formed by
adsorption of Pt on SiO_2 gel, only a nonstationary type of
isotherm was observed on calcination of up to 12 hrs., and
the initial activity remained const. at low catalyst filling
(0.001), which was independent of the time of heating.
The carrier prevented a thermal deactivation of the catalyst,
and at longer heating the activity of adsorption catalysts
became equal to the initial activity after the rise and fall
at the beginning of the thermal treatment.

W. M. Sternberg

STREL'NIKOVA, Zh. V., Cand of Chem Sci — (diss) "Active Centers/^{of}Absorptive Platinic
Catalyzers, Their Transmission and Agglutination," Moscow, 1959, 13 pp (Moscow
State Univ im Lomonosov) (KL, 4-60, 115)

5(4)

SOV/156-59-2-10/48

AUTHORS: Lebedev, V. P., Strel'nikova, Zh. V.

TITLE: The Self-poisoning of Platinum Adsorption Catalysts (Avto-otravleniye adsorbtsionnykh platinovykh katalizatorov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 2, pp 260-263 (USSR)

ABSTRACT: The authors explain self-poisoning as a catalytic process in which a reaction product blocks and inactivates an active center of the catalyst with a certain probability. The probability of poisoning is characteristic of the process concerned. Self-poisoning distinguishes itself from the similar phenomenon of the adsorption inhibition by the irreversibility of blocking. As an example the hydrogenation of benzalaniline in solution of absolute alcohol is investigated on platinum applied to silicagel. In this case the blocking was proved on the basis of an analysis of the charge curves by Sokol'skiy who carried out the experiments. The equation for the reaction is written down in the following way:

$$\frac{1}{[H_2]} = \frac{1}{k[H_2]_0^2} \cdot \frac{1}{t} + \frac{1}{[H_2]_0}, \text{ where } [H_2]_0 \text{ denotes the amount of}$$

Card 1/2

SOV/15-59-2-10/48

The Self-poisoning of Platinum Adsorption Catalysts

hydrogen necessary for the complete hydrogenation of the entire benzalaniline. Figure 1 shows the linear dependence between $\frac{1}{[H_2]}$ and $\frac{1}{t}$. A calculation - its results are shown

by a table - shows that independent of the number of the catalyst atoms the number of reaction processes amounts to approximately 30 in every platinum atom until the poisoning and that the probability of poisoning $1/\beta$ is, therefore, 0.033. The kinetic equation of the processes taking place in connection with self-poisoning is derived and graphically represented by figure 2. The authors thank Professor N. I. Kobozev for valuable advice. There are 3 figures, 1 table, and 1 Soviet reference.

PRESENTED BY: Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta M.V. Lomonosova (Chair of Physical Chemistry, Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 9, 1958

Card 2/2

21127

S/189/60/000/005/002/006
B110/B207

11.1310

AUTHORS: Lebedev, V. P., Strel'nikova, Zh. V.
TITLE: Kinetics and decomposition mechanism of hydrogen peroxide
on adsorption platinum catalysts
PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 2, khimiya, no. 5,
1960, 25-30

TEXT: Hydrogen peroxide is decomposed by platinum applied to the following carriers: carbon, silica gel, aluminum oxide, cadmium oxide, and metallic cadmium according to the theory of active atom groups (Ref. 1: N. I. Kobozev Zh. Fiz. Khimii 13, 1, 1939) at activity centers with odd Pt atomic group-
ing: $[Pt]_1$, $[Pt]_3$, $[Pt]_5$, $[Pt]_7$. The authors try to explain this phenomenon. X
In general, the heterogeneous H_2O_2 decomposition on Pt catalysts is kinetic-
ally assumed as reaction of the first order. Fig. 1 shows the results of
experiments logarithmically according to the fundamental equation of chemi-
cal kinetics: $\log[-d[H_2O_2]/dt] = \log k + n \log[H_2O_2]$ (1). The formal order
of reaction may change according to the nature of the carrier: at CdO = 0.8;

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B110/B207

X

Kinetics and ...

silica gel = 1.2; coal 1.7. According to E. I. Schpitalsky's (Ref. 8: Zh. phys. Chem. 122, 67, 1926) and N. I. Kobozev's (Ref. 9: ZhFKh, 15, 882, 1945) theory of the heterogeneous hydrogen peroxide decomposition in homogeneous catalysis, the intermediate product

$\text{Pt} \begin{smallmatrix} \text{O} \\ \text{O} \end{smallmatrix} + 2\text{H}_2\text{O}_2 + \text{Pt} \xrightleftharpoons{K} \text{PtO}_2 + \text{H}_2\text{O}$ is assumed to form reversibly; its monomolecular decomposition $\text{PtO}_2 \xrightarrow{k_r} \text{Pt} + \text{O}_2$ determines the total reaction rate. $-d[\text{H}_2\text{O}_2]/dt = k_r[\text{PtO}_2]$. If $[\text{Pt}]$ is the amount of platinum, affecting the H_2O_2 decomposition until the beginning of the reaction, the equivalent amount at the steady process is: $[\text{Pt}]_s = [\text{Pt}] - [\text{PtO}_2]$ (3). The equilibrium constant between H_2O_2 and active Pt centers is the following: $K = [\text{PtO}_2] / [\text{H}_2\text{O}_2] \cdot ([\text{Pt}] - [\text{PtO}_2])$. When $[\text{PtO}_2]$ from (3) is introduced into (1) the following kinetic equation is obtained: $-d[\text{H}_2\text{O}_2]/dt = k_r \cdot K \cdot [\text{H}_2\text{O}_2]^2 \cdot [\text{Pt}] / (1 + K[\text{H}_2\text{O}_2])$ (5), or $1/d[\text{H}_2\text{O}_2]/dt = 1/(k_r \cdot K \cdot [\text{Pt}]) \cdot 1/[\text{H}_2\text{O}_2]^2 + 1/k_r \cdot [\text{Pt}]$ (6). Only at high H_2O_2 concentrations,

Card 2/8

21127

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B110/B207

Kinetics and ...

deviations occur from the linear function which are explained by interactions of the intermediate products. The increase of the reaction order corresponds to the relative decrease of $K \cdot [H_2O_2]^2$, which confirms the effect of the carrier upon the equilibrium between substrate (H_2O_2) and intermediate (PtO_2). Independent of the carrier and its Pt concentration, the activation energy of the intermediate is constant (30 000 cal/mole) (Table 2) which exceeds the apparent activation energy of 6000-12000 cal/mole determined according to Arrhenius. According to (5), however, any formal kinetic constant is a function of the product of constants of the intramolecular recombination constant k_r and the equilibrium constant K . The apparent activation energy according to Arrhenius is the sum of the effectively enthalpy of the intermediate whose formation proceeds exothermically: with the catalyst Pt (6%)/CdO, K is 5.35 cm^{-6} at 20°C and at $25^\circ\text{C} = 2.64 \text{ cm}^{-6}$; ΔH is therefore -24000 cal/mole. The values according to Arrhenius can thus be explained. In the heterogeneous H_2O_2 decomposition, the intermediate

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B110/B207

X

Kinetics and

product $\text{Pt} \begin{smallmatrix} \circ \\ \diagup \end{smallmatrix}$ is active. A Pt atom with 2 free valences is necessary for its formation. With respect to the electron sheath, Pt may be: $5d^{10}6s^0$; $5d^86s^2$, and $5d^96s^1$. The first two states are saturated; at $5d^96s^1$, two valences are free. If the Pt atom occurs in inactive states, it may presumably be activated by interaction with the substrate molecule at the expense of the exothermic energy of the intermediate. If two Pt atoms are close together in the state $5d^96s^1$, spin interaction takes place and a system consisting of two atoms with saturated valences is formed. Unsaturated Pt atoms of the $5d^96s^1$ state, effecting the H_2O_2 decomposition can therefore only exist in odd-numbered arrangement. There are 4 figures, 2 tables, and 12 references: 10 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
Kafedra fizicheskoy khimii (Moscow State University imeni
M. V. Lomonosov; Department of Physical Chemistry)

SUBMITTED: July 20, 1960

Card 4/8

STREL'NIKOVA, Zh.V.; LEBEDEV, V.P.

Composition of active centers in the hydrogenation of unsaturated
compounds. Vest. Mosk. un. Ser. 2: Khim. 16 no.1:38-41 Ja-F '61.
(MIRA 14:4)

(Hydrogenation)

(Unsaturated compounds)

STREL'NIKOVA, Zh.V.; TROSMAN, E.A.; LEBEDEV, V.P.

Catalytic activity of platinum deposited on cadmium oxide. Zhur.
fiz.khim. 35 no.6:1327-1330 Je '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Platinum) (Hydrogen peroxide)

STREL'NIKOVA, Zh. V.; LEBEDEV, V. P.

Change of activity of adsorption platinum catalysts during
prolonged storage. Vest. Mosk. un. Ser. 2: Khim. 16 [1.9.17],
no.6:75 N-D '62. (MIRA 16:1)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

(Platinum catalysts)

STREL'NIKOVA, Zh.V.; TROSMAN, E.A.; LEBEDEV, V.P.

Corrosive sublimate poisoning of platinum on cadmium oxide
adsorption catalysts in the decomposition of hydrogen
peroxide. Zhur. fiz. khim. 36 no.11:2469-2472 N'62.
(MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 16932-63

EPR/EPF(c)/EWP(q)/EWT(m)/BDS AFFTC Ps-4/Pr-4 RM/WW/JD
S/076/63/037/004/024/029

69

AUTHOR: Strel'nikova, Zh. V., Lebedev, V. P.

TITLE: Action of acids on platinum ²⁷adsorption catalysts in the decomposition of hydrogen peroxide

PERIODICAL: Zhurnal fizicheskoy khimii, V. 37, No. 4, 1963, 920-922 ²⁷

TEXT: A study is made of the action of nitric, sulfuric, and hydrochloric acids on platinum catalysts when it is accompanied by the decomposition of hydrogen peroxide. Basically the purpose of the study is to clarify the anomalous action of hydrochloric acid. Under the simultaneous action of the hydrochloric acid and hydrogen peroxide, part of the atoms of the catalyst go into solution. At the same time the catalytically more active surface atoms enter into solution. Only a small part (not more than 1%) of the surface atoms of the catalyst are catalytically active. There are 2 tables. The most important English-language source reads as follows: H. E. Kluksdanl, R. J. Houston, J. Phys. Chem., 65, 1469, 1961.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: June 19, 1962

Card 1/1

STREL'NIKOVA, Zh.V.; LEBEDEV, V.V.

Action of acids on platinum adsorption catalysts in the
decomposition of hydrogen peroxide. Zhur. fiz. khim. 37 no. 4:
910-922 Ap '61. (MIRA 17:7)

1. Moskovskiy gosudarstvennyy universitet.

1. The first part of the report is devoted to the

investigation of the properties of the surface of
crystals and their relation to the structure of the
crystal lattice. (MIR 17112)

2. The second part of the report is devoted to the

STREL'NIKOVA, Zh.V.; LEBEDEV, V.P.

Evaluation of the activating and deactivating action during thermal treatment and variation in the degree of filling of adsorption platinum catalysts. Vest. Mosk. un. Ser. 2: Khim. 20 no.2:9-15 Mr-Apr '65.
(MIRA 18:7)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

STREL'NIKOVA, Zh.V.; LEBEDEV, V.P.

Effect of the vanishing of activity of platinum catalysts on
silica gel for hydrogenation in diluted layers. Vest. Mosk. un.
Ser. 2:Khim. 20 no.4:7-9 J1-Ag '65. (MIRA 18:10)

1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo uni-
versiteta.

STRELOV, Aleksandr Borisovich; IGOSHIN, N.G., red.

[M.V.Frunze Higher Naval School of the Order of the Red
Banner and the Orders of Lenin and Ushakov] Vysshee Voenno-
Morskoe Krasnoznamennoe ordenov Lenina i Ushakova uchilishche
imeni M.V.Frunze. Moskva, DOSAAF, 1957. 54 p.

(MLA 17:5)

PROCESSES AND PROPERTIES INDEX

5-23-62

e

Movement of material in a coil-type drying drum. K. K. Stuklov. *Ognesopry*, 13 (10) 461-67 (1948). The movement of material in a drying drum having cylindrical cells is analyzed, and equations are derived for determining the correct mechanical conditions of operation. The velocity, v , of the material (in m./sec.) can be calculated from $v = P/(n \cdot 60) \tan 45(1 - \epsilon) (\tan \alpha \sin \varphi)$, where P is the perimeter of the normal cross section of the cell, n is the number of revolutions of the drum per min., ϵ is the coefficient of filling of the drum with material, α is the angle of inclination of the drum to the horizontal, and φ is the angle of friction. The productivity, Q , of the drum (in tons/hr.) can be calculated from $Q = 118N R^2 \gamma \lambda \tan \alpha \sin \varphi \tan 45(1 - \epsilon)$, where R is the radius of the drum, N is the number of cells, and γ is the weight of the loose material in tons/cu m. The validity of the equations was demonstrated with practical data for clay, but they may be applied also to coals and sand. B. Z. K.

ASB S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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C

Laboratory drier for the continuous determination of moisture loss and shrinkage. K. K. STRELOV. *Sikho i Keram.*, 6 [9] 21 (1940).—The drier consists of a 240- x 1500-mm tube containing an electric resistance heater, a worm-operated indicator to measure longitudinal shrinkage, and a balance from which the sample is suspended. Air is blown into the tube through a slide valve. The temperature in the tube is regulated by means of a rheostat between 20° and 140° for air streams of 0.5 to 2.5 m./sec. For an air stream of less than 0.2 m./sec., the temperature reaches 250°. Relative humidity can be varied between 20 and 85% for the above temperatures. Dry and wet thermometers and a draft gauge are assembled to the tube. A sketch of the drier is included. B Z K.

Asbestos waste and raw magnesite in production of ferrotitan refractories. K. K. Strelav (*Ognesposy*, 1951, 10, 508. *Brit. ceram. Abstr.*, 1952, 231A). A mix of crude magnesite (<0.5 mm. size) 30 and asbestos waste 70% is briquetted at a moisture content of 10%, and a pressure of 1500-2050 lb. per sq. in. and the briquettes are fired at 1300°. The briquettes are crushed to a grain size of <2 mm., and after being mixed with water for 5-8 min. the material is rebriquetted at 11,000-13,000 lb. per sq. in., and the briquettes are fired at 1500°. The product has a firing shrinkage of 3.5%, apparent porosity of 10.6%, bulk d of 2.73 g. per ml., sp. gr. of 3.28, crushing strength of 12,000 lb. per sq. in., and refractoriness under load (28 lb. per sq. in.) of 1560° (beginning) to 1640° (failure).
BRIT. CERAM. RES. ASS. (Cl).

STRELOV, K. K.

Technical control of the production of refractory materials Sverdlovsk, Gos. nauchno-
tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1952. 307 p. (54-17213)

TN677.S7

STRELOV, K.K., inzhener

Efficient manufacture processes for magnesite refractories.
Ogneupory 17 no.5:202-203 My '52. (MIRA 8:9)

1. Gorno-keramicheskiy tekhnikum Ministerstva chernoy metal-
lurgii.
(Refractory materials)

STRELOV, K.K.

STRELOV, K.K.; MAMYKIN, P.S.

Production of forsterite refractory materials from waste asbestos and raw magnesite (MgCO_3). (In: Soveshchanie po eksperimental'noi mineralogii i petrografii. 4th, Moscow, 1952. Trudy, Moskva, 1953. No.2, p.235-249). (MLRA 7:3)

1. Ural'skiy politekhnicheskiy institut im. S.M.Kirova.
(Refractory materials) (Magnesite) (Asbestos)

STRELOV, K.K., kand.tekhn. nauk

Movement of the batch in rotary kilns. Ogneupory 18 no.5:195-198
My '53.

(MIRA 11:10)

1.Gorno-keramicheskiy tekhnikum, Ministerstvo mestnoy promyshlennosti.
(Kilns, Rotary)

U S S R .

Transformation of chrysotile asbestos on heating in the
temperature interval 500-1100°. K. K. Strelov. J.
Appl. Chem. U.S.S.R. 26, 1027-30 (1953) (Engl. translation).
—See C.A. 48, 7474c. H. L. H.

Strelou, N. K.

Transformation of chrysotile-asbestos on heating in the temperature interval 500-1100°. *K. K. Strelou, Zhur. Priklad. Khim. 26, 1091-4(1953).* On the basis of data presented the following scheme of transformation of chrysotile-asbestos is suggested: (1) $2[\text{H}_2\text{Mg}_3\text{Si}_2\text{O}_{10}] \rightarrow [\text{Mg}_2\text{Si}_2\text{O}_6] + 5\text{MgO} + 4\text{H}_2\text{O}$; (2) $[\text{Mg}_2\text{Si}_2\text{O}_6] + 5\text{MgO} \rightarrow 2\text{Mg}_2\text{SiO}_4 + 2\text{MgSiO}_3$. Reaction (1) starts with dehydration and reaches max. between 600 and 800°; (2) starts near 800° and ends between 1100 and 1300°. *V. N. Bednarski*

STRELOV, K.K.

0
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17

21.17. Constant, proposed by A. S. Berezhnoi for the equation of pressing, P_{40} K. K. S. 100 (Osvetleniye), 20, 132, 1955). An implied theoretical discussion based on some experiments and speculations of Berezhnoi and Balshin (Izv. 685, 1948). It is concluded that the porosity of pressed bodies depends on the hardness of the material pressed, i.e., on conditions being equal, the harder the material, the more porous the pressed body. Porosity, as indicated by the degree of compaction, is inversely proportional to the ratio of the constants a and b in Berezhnoi's equation; both these constants depend on the properties of the material and its hardness or other mechanical properties (2 figs., 2 tables).

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STRELOV, K. K.

USSR /Chemical Technology. Chemical Products
and Their Application

I-12

Silicates. Glass. Ceramics. Binders.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31578

Author : Strelov K.K., Aristov G.G., Saparov V.V.

Title : Production of Unfired Magnesite-Chromite Articles
for Vaults

Orig Pub: Ogneupory, 1956, No 4, 145-149

Abstract: Production of unfired magnesite-chromite articles
for vaults has been put into effect at 3 plants
of Glavuralmet. Composition of paste (in % by
weight): chromite (0.5 - 3 mm) 30, magnesite
supplied by KNR (Chinese People's Republic ?),
70, or mixture of magnesite powder (30-40% 3-0 mm)
and magnesite brick scrap (40-30% less than

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USSR /Chemical Technology. Chemical Products
and Their Application

I-12

Silicates. Glass. Ceramics. Binders.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31578

0,088 mm) 70. The paste is moistened with sulfite-alcohol vinasse, specific gravity 1.19-1.22. Articles with holes for pins are tamped in 100- and 160-ton frictional presses at moisture content of 3-3.5%, by 12-22 impacts, and are dried to a moisture content of less than 0.5%. Characteristics of the articles: volumetric weight over 3.0 g/cm³, compression 450-600 kg/cm², temperature of deformation under load of 2 kg/cm²: beginning 1390-1410°, 40% compression 1560-1570°, number of thermal changes (with water) 7-9.

Card 2/2

STRELOV, K.K.

Nomegram for computing the amount of sulfite liquor additive. Ogneupory 21
no.2:86 '56. (MLRA 9:7)

1.Sverdlevskoye otdeleniye Leningradskogo instituta ogneuporov.
(Refractory materials) (Sulfite liquor)

STRELOV, K. K.

15 2
1-4E2C
The determination of the pore size of refractories. K. K.
Strelov. Zavodskaya Lab. 22, 1441-4 (1959).—An app. is
described with which the porosity of a no. of refractories was
dtd. The app. is based on the measurements of the H₂O in
the pores displaced with air. W. M. Sternberg

29

AUTHOR. Strel'ov, K.K. (Cand.Tech.Sc.)

68-5-5/14

TITLE. Expansion of coke oven Dinas refractory bricks manufactured in the Pervoural'sk Works. (Rasshireniye koksovogo Dinasa Pervoural'skogo Zavoda).

ORIGIN: "Koks i Khimiya" (Coke and Chemistry), 1957, No.5, pp.25 - 29 (U.S.S.R.)

ABSTRACT. Results of tests of silica bricks for coke ovens produced in the above works during 1946-1955 are summarised. Specific gravity was determined on 260 specimens, mean yearly values (Table 1) and frequency distribution (Fig.1, Table 2) are given. Mean mineralogical composition % : tridymite 52.5-78.4; quartz 2.6 - 10.0; glass and silicate 14.7 - 27.9. The relationship between mineralogical composition and specific gravity is shown in Fig.2. No relationship between the expansion of the refractory and its mineralogical composition and specific gravity was found (Figs. 3-5). Statistical characteristic of the expansion of the refractory in various temperature regions is given in Table 3. Maximum values for expansion of various consignments of the refractory based on laboratory data and actual expansion of some coke oven batteries measured during their heating are given in Figs. 7-10. Frequency dis-

Card 1/2

Expansion of coke oven Dinas refractory bricks manufactured in the Pervoural'sk Works. (Cont.) 68-5-5/14

Distribution of maximum expansion values in the temperature region 100-180 C for various consignments is given in Fig.11. The total expansion of the Dinas refractories on heating up to 1450 C correlates well with their specific gravity (Fig.12), correlation equation is given. It is concluded that in view of the stability of properties of the Dinas refractory bricks manufactured on the Pervoural'sk works there is no need for a detailed examination of each lot produced except for the standard tests. Expansion up to 700 C should be tested in the works on 10-15 specimens from a given lot and the results obtained included in the certificate accompanying a given lot of coke oven refractory bricks. There are 3 tables and 12 figures.

ASSOCIATION: Urals Branch of the Institute of Refractories.
(Ural'skoye Otdeleniye Instituta Ogneuporov).

AVAILABLE:

Card 2/2

STRELOV, K.K.

Pressing refractory products. Ogneupory 22 no.1:38-42 '57.
(MIRA 10:3)

1. Ural'skoye otdeleniye Leningradskogo instituta ogneuporov.
(Pressed brick) (Refractory materials)